Morphological characterization of soot from the atmospheric combustion of diesel, kerosene and candle wax

Dikio E.D.*[1], Shooto D.N.

[1]*Vaal University of Technology , Vanderbijlpark, South Africa*
**e-mail: ezekield@vut.ac.za*

Diesel, kerosene and candle wax has been used as a precursor for the production of carbon nanomaterial without a catalyst precursor. Nanomaterials formed in the process were analysed by High resolution transmission electron microscope (HR-TEM), Raman spectroscopy, scanning electron microscope (SEM), energy dispersive spectroscopy (EDS) and X-ray diffraction (XRD). Carbon nanomaterial produced from diesel soot show the morphology of carbon nanospheres mixed with carbon nanotubes. Results obtained indicate the formation of carbon nanospheres in diesel, kerosene and candle wax.

[1] D.W.E.A. Santana, M.P. Sepulveda and P.J.S. Barbiera: *Journal of Fuel* **86**, 911 (2007).
[2] M. Al-Ghouti, Y. Al-Degs and F. Mustafa: *Journal of Fuel* **89**, 193 (2009).
[3] M. P. Gomez-Carracedo, J M Andrade, M. Calvino, E. Fernandez, D. Prada and S. Muniategui: *Journal of Fuel* **82**, 1211 (2003).
[4] D. N. Shooto and E. D. Dikio: *Int. J. Electrochem. Sci.* **6**(5), 1269 (2011).
[5] E. D. Dikio: *Int. J. Electrochem. Sci.* **6**(6), 2214 (2011).
[6] E. D. Dikio: Submitted to E-Journal of Chemistry. (2011)